HRGreen

Addendum #1
December 3, 2023

Village of Johnsburg

East Service Area Phase 1
Sanitary Sewer Extension
Job No.: 210915

The Bidding Documents have been revised/clarified based on the information listed below.

PROJECT MANUAL

Section 00110 NOTICE OF LETTING:

- Delete the first sentence of the Notice of Letting, Paragraph titled Filing of Sealed Bids. Replace with the following sentence:

  Sealed Bids will be received by the Village Administrator of the Village of Johnsburg, Illinois ("OWNER"), at Village Hall, 1515 Channel Beach Avenue, Johnsburg, IL 60051 until 11:00 a.m., on **January 4, 2024**, for the construction of the proposed East Service Area Phase I Sanitary Sewer Extension for said OWNER, as described in the project manual and drawings therefore on file in the office of the Village Administrator of the Village of Johnsburg, Illinois.

Section 00320 GEOTECHNICAL DATA:

- Delete Paragraph A._1._a., and replace it with the following:

  Subsurface Exploration and Analysis
  Midland Standard Engineering & Testing, Inc.
  East Side Sanitary Sewer Extension
  MSET File No. 23735

- The above referenced subsurface investigation report is attached to this Addendum #1.

Section 00430 BID BOND:

- Delete the Bid Bond and replace it with the attached Bid Bond.

  The replacement Bid Bond reflects the revised Date of Letting.

HRGreen.com
Phone 815.385.1778 Fax 815.385.1781 Toll Free 800.728.7805
420 North Front Street, Suite 100, McHenry, Illinois 60050

Section 02534 SUBMERSIBLE WASTEWATER PUMPS AND LIFT STATION:

- PART 2 – PRODUCTS_ 2.05 CONTROL PANEL
  - The following clarify which entity, Contractor or Integrator, furnishes the referenced materials.
    - L. Intrinsically Safe Barriers – Integrator
    - O._2., Q._1., & Q._2. Level Controls, Transducer and Floats – Integrator
    - O._17. Electric Meter Head/Box – Contractor

Section 02584 SANITARY STRUCTURES:

- PART 2 – PRODUCTS_ 2.02 SANITARY AIR RELEASE VALVE AND VAULT_F. Valves_1.
  - Delete F. Valves_1., and replace with the following:
    1. Combination Air Valve for Wastewater
       a. Manufacturers:
          i. 2-inch A.R.I. USA, Model D-020 combination air valve with extension and discharge elbow.
          ii. Vent-Tech Model SDG – Series C Combination Air Valve for Wastewater.

       b. Furnish two (2) air valves, one to be installed as indicated on the Plans, the other to be provided for storage in the Owner's OM&R inventory. Both valves shall be from the same manufacturer.

PLANS

SHEET CU300 LIFT STATION - SITE PLAN, &
SHEET CU302 LIFT STATION - DETAILS

- Clarification: Construction of the "FUTURE GENERATOR PAD" is not a requirement of this project. The size and position of the pad on the site is provided to facilitate locating ends of the "CIRCUIT TO FUTURE GENERATOR" conduits.

ADDITIONAL INFORMATION

- A second addendum, Addendum #2, will be issued. In general, the following will be addressed with supporting documents:
  - Geotechnical Data: A Soils Exploration and Analysis report will be distributed with this addendum.
  - Minor sanitary sewer and force main alignment revisions to address McHenry County Dept. of Transportation (McDOT) review comments.
  - Schedule of Values: A replacement Schedule of Values will be distributed. Revisions will reflect McDOT's review related plan changes noted above.

BIDDER QUESTIONS

1. QUESTION: Can you provide any additional information on the potable water wells in the immediate vicinity?

   RESPONSE: The following is unverified information provided by a local well driller with drilling and maintenance experience related to the listed wells. As provided in Paragraph 5.03 of the General Conditions, the Contractor shall not rely on the accuracy of the information provided in this response or make claims against the Owner or Engineer as a result of using this information. The following response is not a part of the Contract Documents.
   - 3312 Chapel Hill Rd. (Granny's Diner of Johnsburg) 6" well 49' deep with a 7' static
   - 3309 Chapel Hill Rd. (Hotel) 5" well 47' deep
   - 3302 Chapel Hill Rd. appears modifications were made to an existing well to share with another home. No depth on record, pump set 20'.
   - 1816 Bolling Ave. No records.
     - *Additional Information: According to McHenry County GIS map data, both 3302 Chapel Hill Rd. and 1816 Bolling Ave. are owned by the same property management company. Although unverified, these could be the properties sharing the well at 3302 Chapel Hill Rd. as noted by the local driller.*

   Additional local water well records, when available, may be found at the following website. Queries of wells shown on this interactive map, to the northeast of the site indicate depths of 36' to 56', with sand/gravel typically occurring at ~30'. https://www.americangeosciences.org/critical-issues/maps/water-wells-illinois#google_vignette

This Addendum #1 **must** be attached and signed with your Proposal.

Received _____, 2023

Contractor _____

SECTION 00430
BID BOND

KNOW ALL MEN BY THESE PRESENTS; That we _____, of _____ as Principal, and _____, of _____, as Surety, are held and firmly bound unto the Village of Johnsburg, Illinois hereinafter referred to as the Obligee, in the penal sum of _____, ($_____) for which payment said Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

WHEREAS, the Principal is herewith submitting their sealed proposal for constructing the East Service Area Phase I Sanitary Sewer Extension as described in Section 00110 Notice of Letting.

Date of Letting: January 4, 2024

NOW THEREFORE, if the said proposal bid by said Principal is accepted, and the Principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and shall post the Performance and Maintenance Bond and Payment Bond required by the contract documents with good and sufficient surety for the faithful performance of such contract, for the prompt payment for all labor and material furnished in the prosecution thereof and for the maintenance of the improvements in good repair and specified working conditions for One (1) year(s) after final acceptance of the project by the Obligee, then this obligation shall become null and void, or in the event of the failure of the Principal enter such contract and give such Performance and Maintenance Bond and Payment Bond, the Principal and Surety on these bonds hereby agree to pay to the Obligee the full amount of this bid bond, together with court costs, attorney's fees, and any other expense of recovery.

IN WITNESS WHEREOF, the Principal and Surety have caused these presents to be signed this day of_____,20____.

_____
Principal
By _____
Contractor's Signature

_____
_____
Surety

END OF SECTION 00430

MSET

www.msetinc.com

MIDLAND STANDARD ENGINEERING & TESTING, INC.
410 Nolen Drive, South Elgin, Illinois 60177
(847) 844-1895 f(847) 844-3875

November 30, 2023

Village of Johnsburg
c/o Mr. Chad Pieper, PE
HR Green, Inc.
1391 Corporate Drive, Suite 203
McHenry, Illinois 60050

Re: Subsurface Exploration and Analysis
East Side Sanitary Sewer Extension
Johnsburg, Illinois
MSET File No. 23735

Dear Mr. Pieper:

Midland Standard Engineering & Testing, Inc. has conducted a subsurface exploration and laboratory analysis for the above referenced project.

INTRODUCTION

Purpose and Scope

The purpose of this exploration and analysis was to determine the various components of the soil, the engineering characteristics of the materials, and to provide soil parameters for the sanitary sewer extension and new lift station.

The scope of this exploration included a geological reconnaissance of the site, a review of available soil information, subsurface exploration, soil testing, and an engineering analysis and evaluation of the materials encountered.

General

The exploration and analysis of the foundation and subsurface conditions reported herein are considered in sufficient detail and scope for analysis. This report has been prepared for the exclusive use and specific application to the proposed project.

The recommendations submitted are based on the available soil information, standard utility construction practices, and available site location information. Any revision in the plans for the proposed structures from those enumerated in this report should be brought to the attention of the Soils Engineer to determine if changes in the recommendations are required. Any deviations from the noted subsurface conditions that are encountered during construction should also be brought to the attention of the Soil Engineer.

The Soils Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology. No other warranties are implied or expressed.

PROJECT LOCATION AND DESCRIPTION

Project Location and Description

The project site is located at Chapel Hill Road south and east of the Fox River in Johnsburg, Illinois. The project consists of main line gravity sewer along Chapel Hill Road, and then east along Linden Avenue to and proposed lift station at Linden and River Terrace Drive. The new force main from the pump station retrace the gravity line going west on Linden, and then under Chapel Hill Road to a 90° turn, and then will be jacked under the river to the existing pump station at Chapel Hill Road and Fairview Avenue.

FIELD EXPLORATION

General

Our exploration program consisted of making four (4) structure borings to a depth of twenty-five (25) to thirty (30) feet below ground surface. An MSET field crew staked the boring locations at the site. Ground surface elevation at the boring locations were determined using a Trimble GNSS Catalyst Receiver.

Drilling Equipment

The soil borings were drilled using a truck mounted Geoprobe® 3100 drill rig equipped with a rotary head. Hollow stem augers were used to advance the boreholes.

Sampling and Standard Penetration Test Procedures

Representative samples were obtained by the use of split-spoon sampling procedures in accordance with ASTM Procedure D1586.

During the split spoon sampling procedures, a standard penetration test was performed in accordance with current ASTM D1586 procedures. At sampling intervals, advancement of the boring was stopped and all loose material removed from the borehole. The sampler was then lowered into the borehole and seated in undisturbed soil by pushing or tapping, taking suitable precautions that the rods were reasonably tight. The sampling spoon was then driven using an automatic drop hammer. During the sampling procedure, the standard penetration value (N) of the soil was determined. The standard penetration value (N) is defined as the number of blows of a one hundred forty-pound (140 lb) hammer required to advance the spoon sampler one foot (12") into the soil.

The results of the standard penetration tests indicate the relative density and comparative consistency of the soils and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The results of the standard penetration tests can be found on the attached boring logs.

Strength Tests

During the field boring operations, samples of the predominantly cohesive soil from the split spoon sampling device were tested using a calibrated soil penetrometer to aid in determining the strength of the soil. Consideration must be given to the manner in which the values of the unconfined compressive strengths were obtained. Split spoon sampling techniques provide a representative, but somewhat disturbed soil sample.

Water Level Measurements

Water level observations were made during and immediately after the boring operations were completed and are noted on the attached boring logs. In relatively pervious (granular) soils, the indicated elevations are considered reliable groundwater levels. In relatively impervious (clay) soils, the accurate determination of the groundwater elevation may not be possible, even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

LABORATORY TESTING

Scope

A supplemental testing program was conducted to ascertain additional pertinent engineering characteristics of the subgrade and foundation materials necessary in analyzing the behavior of the proposed construction. The soils laboratory work was performed in accordance with applicable ASTM standards. The laboratory-testing program included visual classification; moisture content determination for each sample obtained, and unconfined compression testing for applicable samples. The results of laboratory testing are reported on the attached boring logs.

SUBSURFACE CONDITIONS

Soil Profile

The soil profile encountered at boring locations consists of:

Shallow depth cohesive deposits including firm to very stiff CLAY, CL and Sandy CLAY, SC that have moisture contents, Mc of 9 to 29 percent and extend to depths of 2.5 feet (SB-4) and 6.0 feet (SB-1).

The clays are underlain by medium dense SAND SP with trace sit and gravel. The SAND is saturated below elevation 737 to 738 and it extends to a depths of 23.5 feet (SB-1) to 12.5 feet at SB-3.

At boring SB-2, the SAND SP grades to medium dense Silty SAND, SM at a depth of 14 feet. At borings SB-3 and SB-4, the SAND SP ends at depths of 12.5 feet and 14.5 feet, and stiff to very stiff CLAY C with Mc of 20 to 23 percent and an unconfined compressive strength, Qu of 1..0 to 2.68 tons per square foot was encountered.

At depths of 23 to 28 feet at all borings, coarser grained, medium dense SAND with Gravel to Clayey SILT and SAND with gravel was encountered. All borings were terminated in this material. Details of the soil conditions at each boring location are presented on the attached boring logs.

Groundwater Conditions

Groundwater measurements were made during and immediately after the drilling operations were complete. Ground water was encountered in the upper profile granular deposits at a depth of 55.5 feet to 10.5 feet, elevation 735 to 738. Details of the groundwater measurements at each boring location are presented on the attached Boring Logs.

DISCUSSION AND RECOMMENDATIONS

Sewer Invert Conditions

Pipe and Lift Station Subgrade

The soil anticipated to be exposed at pipe subgrade level based on the soil borings is shown in the table below. Pipe support should be developed by providing a minimum of six (6) to eight (8) inches of IDOT CA-05 or CA-07, bedding layer.

Boring Number	Location	Estimated Invert Depth	Soil Description	Subgrade Treatment
B-1	Jacking Pit West Side of Chapel Hill Road	12 +/- feet	Medium dense SAND with Silt	Trench/Pit Dewatering, Fabric & Standard Pipe Bedding
B-2	Linden Ave. East of Chapel Hill	7 Feet (FM) 25 +/- Feet	Trench Backfill (for Force Main) Medium Dense SAND with Gravel	Trench Dewatering Fabric & Standard Pipe Bedding
B-3	Lift Station Linden & River Terrace	20 to 30 +/- Feet	Stiff to Very Stiff Silty CLAY, CL over Med. Dense Clayey SILT w/ Gravel	Standard Pipe Bedding
B-4	East Side Chapel Hill S. of Linden	22 +/- Feet	Stiff to Very Stiff Silty CLAY, CL	Standard Pipe Bedding

Pipe Jacking Under River

The force main under the river will be jacked or drilled parallel and to the south west of the bridge alignment. Presumed river bottom elevations, per HR Green "Overall Key Plan" Sheet CG 100, ranges from 732 to 734. Based on boring SB-1, saturated medium dense SAND with Silt, SP-SM overlying medium dense SAND with Gravel should be encountered. *Pipe installation methods should consider saturated granular deposits*.

New Lift Station B-3

Base Slab Parameters

At the time of this exploration, design grades were not available. However, the lift station is anticipated to include a wet well and dry well structure supported on a concrete base slab at depths in the range of 25 feet (elevation 718±). The bearing soils at the anticipated design elevation are anticipated to expose stiff CLAY, CL overlying medium dense Clayey SILT and Sand, with Gravel. A net allowable bearing pressure, Factored Resistance Available, FRA of 2,000 psf may be used for design.

Because of the potentially wet soil foundation subgrade conditions, a working platform consisting of lean concrete or IDOT CA-07 crushed stone over a nonwoven geotechnical fabric should be installed immediately after excavation to the subgrade level. This working platform is intended to protect the integrity of the bearing soil during construction of the base slab.

Lateral Earth Pressures

For walls rigidly restrained at the top, such as lift station structures, an undrained at-rest earth pressure condition can develop. The following table outlines the earth pressure loading for design of these walls based on the conditions encountered at the boring location. The effects of surcharge load and live loads on the ground surface behind the wall must then also be added to these earth pressures.

Soil Description	Elevation	Moist Unit Weight	Submerged Unit Weight [1]	Angle of Internal Friction, φ'	At Rest Earth Pres. Coefficient	Equiv. Fluid Pressure
CLAY (CL) & Clay SILT	743 to 738	130 pcf	--	28°	0.53	64 psf/ft
SAND SP & SP-SM	738 to 731	--	68 pcf	30°	0.50	96 psf/ft
CLAY & Silty CLAY (CL)	731 to 715	--	68 pcf	28°	0.53	98 psf/ft

Notes

1. The static ground water level measured in soil borings at elevation 737 to 738. Submerged unit weight used below this elevation. Fluid pressure includes ground water pressure.

To determine buoyancy of tanks/stations constructed below the water table, a soil to concrete friction coefficient of 0.25 may be used.

Excavation Bracing

Soil Parameters for Temporary Construction Excavation Bracing

Excavations at the site are anticipated to extend through shallow depth clay layers and then into water bearing granular soils. OSHA requirements dictate the use of sloping back or shoring and bracing of the excavation during construction. All work should be done in accordance with OSHA and local requirements.

Soil parameters for the design of temporary sheet pile construction bracing are listed below. The wall design should include ground water pressure and the effects of surcharge loads and live loads, on the ground surface behind the wall. The additional loading of unbalanced ground water levels from construction dewatering should also be addressed.

Soil Description	Elevation	Moist Unit Weight (pcf)[1]	Total Shear Strength		Earth Pressure Coeff.		Interface Friction
			c (psf)	φ'	Ka	Kp	Angle or Adhesion
SB-1							
CLAY to Clayey SAND	747 to 742	130	750	0°	1.00	1.00	600 psf
SAND SP (loose)	742 to 739	130	0	26°	0.56	2.56	11°
SAND SP, SP-SM	739 to 722	68	0	30°	0.50	3.00	11°
SB-2							
Sandy CLAY SC	746 to 743	130	3500	0	1.00	1.00	1200 psf
SAND SP	743 to 732	68	0	30°	0.50	3.00	11°
Silty SAND to SAND w/Gravel	732 to 716	68	0	36°	0.41	3.85	22°
SB-3							
CLAY to Clayey SILT	743 to 738	130	500	0°	1.00	1.00	500 psf
SAND SP	738 to 731	68	0	30°	0.50	3.00	11°
CLAY to Silty CLAY	731 to 715	68	1500	0°	1.00	1.00	850 psf
Clayey SILT & SAND	715 to 713	73	0	36°	0.41	3.85	14°
SB-4							
CLAY CL	743 to 741	130	780	0°	1.00	1.00	600 psf
SAND SP	741 to 729	68	0	30°	0.50	3.00	11°
CLAY CL	729 to 719	38	1500	0°	1.00	1.00	850 psf

Notes

1. The ground water level was measured in the borings at approximate elevation 737 to 738. Submerged unit weight used below this elevation.

Excavation Conditions and Dewatering

Deep excavation to depths in the range of 20 to 25 feet are anticipated to construct the lift station and install the sewer pipe. Water bearing sands were noted at approximate elevation 737/738 and will be exposed during construction. Dewatering of the site will be necessary to control groundwater entering the excavations. Dewatering of the site will likely require a combination of sumps and pumps at the bottom of the excavation and well points to lower the groundwater table around the excavation, and sheet piling to cut off the water bearing granular soil layers.

Closure

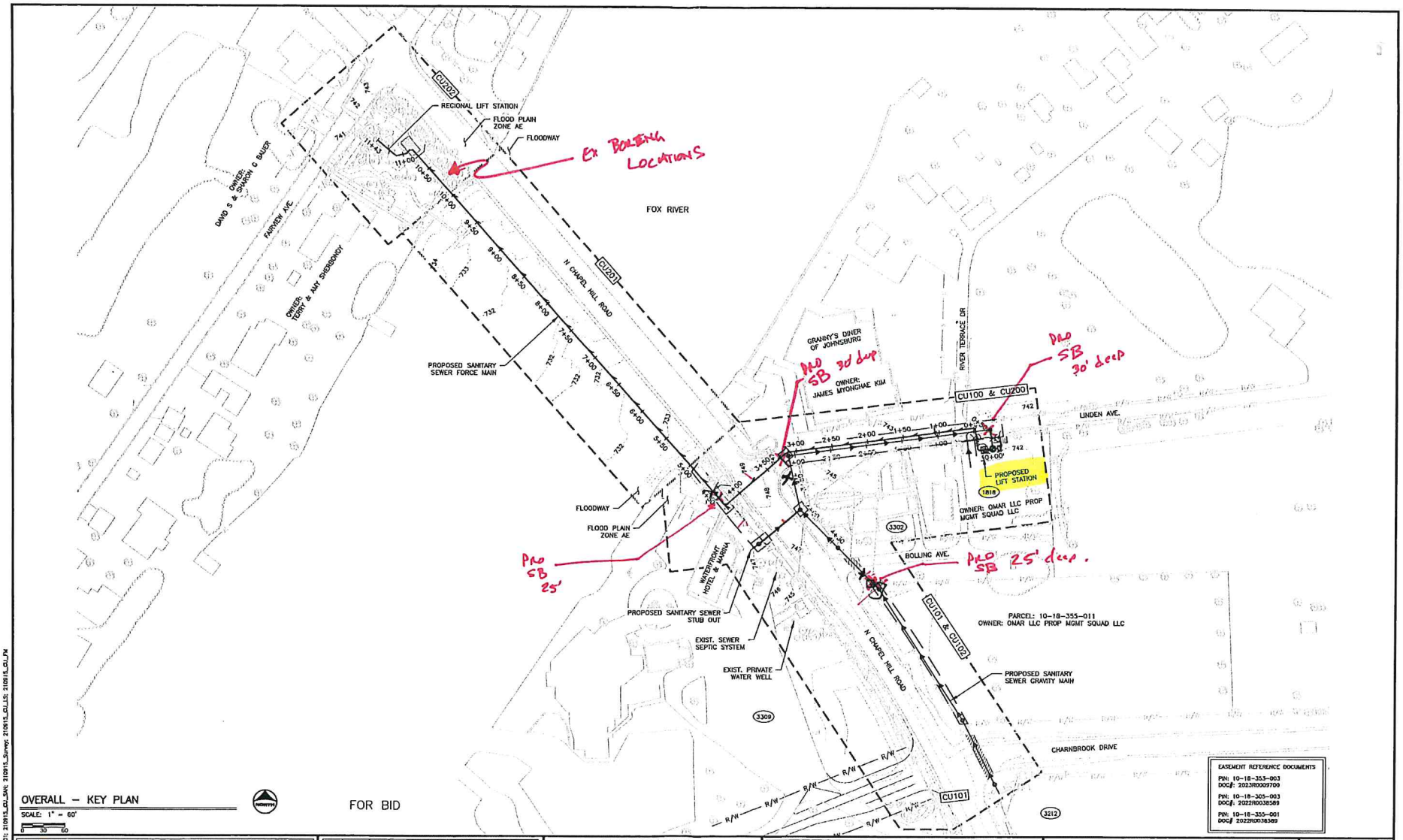
This report is based on the information available at this time. If you have any questions regarding this report, please feel free to call.

Sincerely,
MIDLAND STANDARD ENGINEERING & TESTING, INC.

William J. Wyzgala, P.E.
Principal Engineer

Attachments: Boring Location Map
Boring Log (SB-1 through SB-4)
General Notes

83358



OVERALL – KEY PLAN

SCALE: 1" = 60'

0 30 60

FOR BID

DRAWN BY: HCM JOB DATE: 2022
APPROVED: SCM JOB NUMBER: 210915
CAD DATE: 9/28/2023 11:49:32 AM
CAD FILE: \\hrgreen.com\HRC\Data\2021\210915\CAD\Dwgs\C\210915_CG100_Overall Project Key Map.dwg

BAR IS ONE INCH ON ORIGINAL DRAWINGS. IF NOT ONE INCH, ADJUST SCALE ACCORDINGLY.

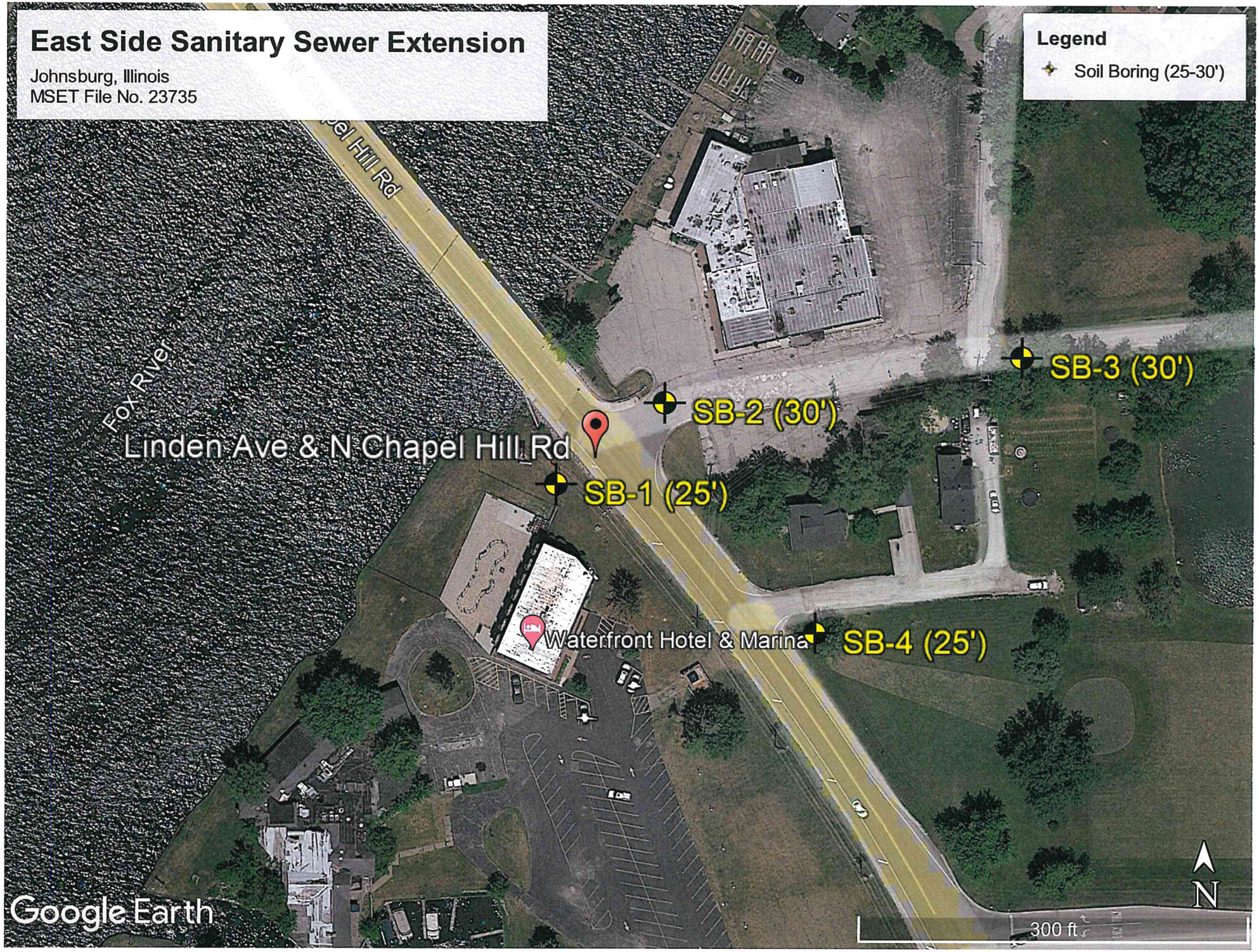
NO.	DATE	BY	REVISION DESCRIPTION

HRGreen
ILLINOIS DESIGN FIRM # 184.001322
1291 CORPORATE DRIVE, SUITE 203
MCHENRY, ILLINOIS 60050
PHONE: 815.385.1778 | TOLL FREE: 800.728.7805
FAX: 815.385.1781 | HRGreen.com

EAST SERVICE AREA PHASE 1
SANITARY SEWER EXTENSION
VILLAGE OF JOHNSBURG
JOHNSBURG, ILLINOIS

FOR BID
OVERALL KEY MAP

SHEET NO.
CG100


East Side Sanitary Sewer Extension
Johnsburg, Illinois
MSET File No. 23735
Legend
Soil Boring (25-30')
Fox River
Linden Ave & N Chapel Hill Rd
SB-1 (25')
SB-2 (30')
SB-3 (30')
SB-4 (25')
Waterfront Hotel & Marina
Google Earth
300 ft
N

MSET PROJECT NO.: 23735	**LOG OF BORING NO. SB-1**	Page 1 of 1
PROJECT: East Side Sanitary Sewer		SITE LOCATION: Johnsburg, IL
BORING LOCATION: 1010414.9E, 2079610.5N		CLIENT: Village of Johnsburg

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		6.5" Black TOPSOIL / Vegetation	747.5							
		Black and Dark Brown Lean CLAY with Sand and roots, SC, firm	747.0	SS	1	3	12		0.5 Qp	poor recovery
4		Dark Brown and Brown Clayey SAND, SC, slightly dense	744.5	SS	2	7	29			poor recovery
		Brown (f-c) SAND with Gravel, moist, SP, very loose	741.5	SS	3	1	10			
8		to medium dense		SS	4	22	6			
		Brown (m-f) SAND with Silt, saturated, SP-SM, medium dense	737.0	SS	5	22	24			
12				SS	6	19	24			began mud drilling at 15'
16										
				SS	7	26	25			
20										
24		Grey (f-c) SAND with Gravel, moist, SP-GP, medium dense	724.0	SS	8	10	11			
		End of Boring at 25.0'	722.5							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: 13.5'
IMMEDIATELY AFTER DRILLING: 10.5'
DELAYED READING AFTER

MSET

BORING STARTED: 11/29/23
BORING COMPLETED: 11/29/23
LOGGED BY: MM
BORING METHOD: HSA

MSET PROJECT NO.: 23735	**LOG OF BORING NO. SB-2**	Page 1 of 1
PROJECT: East Side Sanitary Sewer	SITE LOCATION: Johnsburg, IL	
BORING LOCATION: 1010468.6E, 2079673.5N	CLIENT: Village of Johnsburg	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		6" Black TOPSOIL / Vegetation	746.2							
		Dark Brown Sandy Lean CLAY, SC, very stiff	745.7	SS	1	12	9		3.75 Qp	
4		Brown and Grey SAND and Gravel, SP-GP, medium dense	742.7	SS	2	20	14			
		Brown (f-c) SAND with Gravel, SP, medium dense	741.2	SS	3	21	5			
8		saturated ▽		SS	4	21	17			
12				SS	5	19	20			
		Grey Silty SAND with Gravel, SM, medium dense	732.2	SS	6	17	23			
16										began mud drilling at 16'
				SS	7	17	21			
20										
24		Grey SAND with Gravel, SP, medium dense	722.7	SS	8	15	13			
28				SS	9	15	14			
		End of Boring at 30.0'	716.2							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: ▽ 10'
IMMEDIATELY AFTER DRILLING: ▽
DELAYED READING AFTER ▽

MSET

BORING STARTED: 11/28/23
BORING COMPLETED: 11/28/23
LOGGED BY: MM
BORING METHOD: HSA

MSET PROJECT NO.: 23735	LOG OF BORING NO. SB-3	Page 1 of 1
PROJECT: East Side Sanitary Sewer	SITE LOCATION: Johnsburg, IL	
BORING LOCATION: 1010771.7E, 2079713.7N	CLIENT: Village of Johnsburg	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		8" Black TOPSOIL / Vegetation	743.2							
		Dark Brown and Brown Lean CLAY with Sand, CL, firm	742.5	SS	1	1	25	91	0.62	
4		Brown and Grey Clayey SILT and SAND, ML-SM, firm	740.2	SS	2	3	16		0.5 Qp	
		Brown (f-c) SAND with Gravel, saturated, SP, medium dense	738.2	SS	3	15	18			
8		Brown SAND, SP, medium dense wet	735.2	SS	4	16	21			
		Brown and Grey (f-m) SAND with Silt, moist, SP-SM	732.2	SS	5	9	19			began mud drilling at 11'
12		Grey Lean CLAY with Sand and Gravel, Limestone Fragments, SC, medium dense	730.7	SS	6	29	30			
16		Grey Silty CLAY, CL, very stiff	726.2							
				SS	7	10	23	105	2.68	
20										
24		stiff		SS	8	3	20		1.0 Qp	
28		Grey Clayey SILT and SAND with Gravel, SM-GM, medium dense	714.7	SS	9	10	9			
		End of Boring at 30.0'	713.2							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: 5.5'
IMMEDIATELY AFTER DRILLING:
DELAYED READING AFTER

MSET

BORING STARTED: 11/27/23
BORING COMPLETED: 11/27/23
LOGGED BY: MM
BORING METHOD: HSA

MSET PROJECT NO.: 23735	**LOG OF BORING NO. SB-4**	Page 1 of 1
PROJECT: East Side Sanitary Sewer	SITE LOCATION: Johnsburg, IL	
BORING LOCATION: 1010632.7E, 2079489.8N	CLIENT: Village of Johnsburg	

DEPTH (feet)	SOIL TYPE	Material Description	Elevation	SAMPLE TYPE/ INTERVAL	SAMPLE NO.	SAMPLE N-VALUE Blows per ft.	TESTS Wc%	TESTS Dry Unit Weight, pcf	TESTS Unconfined Compressive Strength, tsf	REMARKS
0		14" Black TOPSOIL / Vegetation	743.5							
		Brown Lean CLAY with Sand, CL, stiff	742.3	SS	1	10	9	91	0.78	
		Brown (f-c) SAND with Gravel, SP, medium dense	741.0							
4				SS	2	19	4			
		moist		SS	3	21	17			
8		Brown SAND with Silt, SP, saturated, medium dense	735.5	SS	4	18	20			
				SS	5	15	21			began mud drilling at 10'
12				SS	6	6	20	110	1.28	
		Grey Lean CLAY, CL, stiff to very stiff	729.0							
16										
				SS	7	7	21	107	2.13	
20										
24		Grey SAND with Gravel, SP-GP, medium dense	719.5	SS	8	14	12			
		End of Boring at 25.0'	718.5							

WATER LEVEL OBSERVATIONS, ft.
DURING DRILLING: 8.5'
IMMEDIATELY AFTER DRILLING:
DELAYED READING AFTER

MSET

BORING STARTED: 11/29/23
BORING COMPLETED: 11/29/23
LOGGED BY: MM
BORING METHOD: HSA

GENERAL NOTES

PARTICLE SIZE DESCRIPTION & TERMINOLOGY

Coarse Grained or Granular Soils have more than 50% of their dry weight retained on a #200 sieve; they are described as: boulders, cobbles, gravel or sand. Fine Grained soils have less than 50% of their dry weight retained on a #200 sieve; they are described as: clays or clayey silts if they are cohesive and silts if they are non-cohesive. In addition to gradation, granular soils are defined on the basis of their relative in-place density and the fine grained soils on the basis of their strength or consistency and their plasticity.

Major Component of Sample	Size Range
Boulders	Over 8 in. (200 mm)
Cobbles	8 inches to 3 inches (200 mm to 75mm)
Gravel	3 inches to #4 sieve (75mm to 4.75mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt	Passing #200 sieve (0.075mm to 0.002mm)
Clay	Smaller than 0.002mm

Descriptive Term of Components Also Present in Sample	Approximate Quantity (Percent)
Trace	1 - 9
Little	10 - 19
Some	20 - 34
And	35 - 50

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

GRANULAR SOILS

DENSITY CLASSIFICATION	APPROXIMATE RANGE OF N *
Very Loose	0 - 3
Slightly Dense	4 - 9
Medium Dense	10 - 29
Dense	30 - 49
Very Dense	50 - 80
Extremely Dense	80 +

COHESIVE SOILS

CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH, Qu - TSF	APPROXIMATE RANGE OF N *
Very Soft	0.25	0 - 2
Soft	0.25 - 0.49	3 - 4
Firm	0.50 - 0.99	5 - 8
Stiff	1.00 - 1.99	9 - 15
Very Stiff	2.00 - 3.99	16 - 30
Hard	4.00 - 8.00	31 - 50
Very Hard	8.00 +	Over 50

* STANDARD PENETRATION TEST (ASTM D1586) - A 2.0" outside-diameter, split barrel sampler is driven into undisturbed soil by means of a 140 pound weight falling freely through a vertical distance of 30 inches. The sampler is normally driven 3 successive 6 inch increments. The total number of blows required for the final 12 inches of penetration is the Standard Penetration Resistance (N).